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ABSTRACT

The impact of the Rural Alabama Pregnancy and Infant Health (RAPIH) Program was evaluated in relation to prenatal care, birth outcome measures, and several child health and home environment outcomes. Begun in 1983, RAPIH targets poor rural blacks in three of west-central Alabama's poorest counties, where economic conditions and infant mortality are among the worst in the United States. Women who go to West Alabama Health Services' (WAHS) clinics in Greene and Hale Counties for prenatal care are invited to enroll in the RAPIH home visiting program. Other women are referred by their physicians or the Alabama Department of Human Resources. Home visitors are the special link between WAHS' health care providers and the community's mothers. Patients are enrolled during their pregnancy and visited through the first two years of the child's life for a total of 38 visits. The evaluation sample consisted of 204 mothers in four groups: WAHS visited, non-WAHS visited, WAHS nonvisited, and non-WAHS nonvisited. Data sources included interviews, prenatal medical records, hospital delivery records, and pediatric medical records. Quantitative data indicated some benefit due to home visiting, particularly regarding increased use of prenatal and pediatric care. Qualitative data offered insights into curriculum and focus of treatment, service providers, program participants, and program implementation. (RH)

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THE RURAL ALABAMA PREGNANCY AND INFANT HEALTH (RAPIH) PROGRAM

prepared by

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for presentation at

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Situational Context

The RAPIH program is part of the larger Child Survival/Fair Start initiative funded by the Ford Foundation. Most of these programs share common goals of improving prenatal practices, birth outcomes and child health and development in disadvantaged populations. The Alabama project, which began in 1983, targets poor rural blacks residing in three of west central Alabama's poorest counties where economic conditions and infant mortality are among the worst in the United States. Blacks comprise 70% of the total population of about 43,000 people and only 18.5% of them live in towns of greater than 2500 people. Approximately 35% lived below the poverty level and infant mortality stood at 28.2 for 1976-80.

Intervention

To help address maternal and child health problems, women from this area who present themselves to West Alabama Health Services' (WAHS) clinics in Greene and Hale Counties for prenatal care are invited to enroll in the RAPIH home visiting program. Other women are referred by their physicians or the Alabama Department of Human Resources to the program. This program is administered by WAHS, Inc., a federally-funded Rural Health Initiative clinic providing comprehensive health services to counties in west central Alabama, and is evaluated by the University of Alabama. Since the program

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began enrolling clients during the spring of 1984, more than 350 women have been seen by a home visitor.

Patients are enrolled during their pregnancy and are visited through the first two years of the child's life. The planned intervention is uniform for all families and consists of biweekly visits during pregnancy and through the child's first six months of life. During the second six months, visits occur monthly and then every six weeks until the child's second birthday. A model visitation program begins by the twentieth week of gestation and concludes with the child's second birthday, providing for a total of 38 visits to the prospective mother-infant pair: 10 prenatally, one at delivery and 27 postnatally. (Table 1) The model plan, however, is not always realized.

The RAPIH home visiting service is provided by a group of non-professional community workers (6 to 8 women) who provide outreach, education, and social support to low income black families. Home visitors are the "special link" between WAHS' health care providers and community mothers. They personalize information presented to mothers in the prenatal education classes held at WAHS, and following the birth of the child, they reinforce information on well-baby care and child development that is presented to the mother during regular well-child checkups. Information imparted to the mothers comes from an educational curriculum developed specifically to meet the needs of the area's young black mothers.

The purposes of this paper are to assess the impact of the RAPIH home visitation program as it relates to prenatal care, birth outcome measures, and several child health and home environment outcomes.

Methods

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For the evaluation sample, 241 area women were asked to participate in the study; of these 206 (85.5%) agreed. The initial intent was to have WAHS patients receive the intervention and non-WAHS patients be the non-visited comparison group. This, however, was very difficult to achieve. In the final analysis, we ended up with four groups: WAHS visited, non-WAHS visited, WAHS non-visited, and non-WAHS non-visited. This paper will compare three of these groups with chi-square tests, analyses of variance, median tests, and Kruskal-Wallis tests. The small non-WAHS visited group is not included. The remaining three groups can be ranked in terms of amount of intervention, i.e. non-WAHS control received no intervention, WAHS control received clinic-based material only, and WAHS visited received home visits in addition to clinic-based educational programs.

We started the evaluation component with 206 clients. Data sources included a series of interviews (intake, predelivery, one month, six month, 12 month, 18 month, and 24 month), prenatal medical records, hospital delivery records, and pediatric medical records. This presentation will present information about utilization of prenatal care by 199 women, birth outcomes for 202 women, utilization of pediatric care by 163 children, and Caldwell HOME assessments for 129 families at 12 months.

Results

Overall, the mothers in this project are mostly single (81%), young (37% teenagers, 35% aged 20-24), high school graduates (77%), unemployed (82%), and having their first child (61%). (Table 2) As can be seen from Table 3, 73 women received an average of about five prenatal home visits and 65 women and children pairs were visited at home an average of 11 times between the child's birth and first birthday. Sixty women were home visited

both prenatally and postnatally.

Table 4 demonstrates that home visited women averaged two more prenatal visits to a doctor compared to a group of non-WAHS control women. This difference remains statistically significant after adjusting for gestational age at time of first clinic visit. Approximately 50% of the women began prenatal care in the first trimester. About half of the home visited women were still receiving less than an optimal number of visits, but this compares favorably to non-WAHS control women where the rate was almost three quarters.

Birth outcomes, however, were not significantly improved by home visiting. (Table 5) Birthweights and APGAR's are similar in all groups. The need for intensive care was twice as high in the non-WAHS group although this was not statistically significant. Breastfeeding rates were low in all groups and almost all supplemented with formula.

Home visited and WAHS women were more likely to bring their children to see a physician during their first three weeks of life. (Table 6) They were also more likely to have their children receive their first immunizations by the recommended ages. The children also were less likely to receive an insufficient number of physician visits during their first year of life.

There was little difference in the home environments of the children. (Table 7) Home visited women did score higher on organization of physical and temporal environment.

In summary, the quantitative results show some benefit due to home visiting in the areas of increased utilization of prenatal and pediatric care. This is true of WAHS patients in general with some increased benefit for those having a home visitor. Parenting skills, as reflected in the

Caldwell HOME data, were influenced very little as were other measures not presented here.

We now turn to a more qualitative look at the program in terms of lessons learned during implementation and the WAHS agency perspective on the value of this type of program. Four major lessons involved:

1) curriculum and focus of treatment
2) service providers
3) program participants
4) process of program implementation.

Curriculum and focus of treatment: The prenatal curriculum presented by home visitors included 24 possible topics; an additional 45 possible topics were available postnatally. Since clients completed an average of 5 prenatal visits and 15 postnatal visits and were free to choose topics, this curriculum was much too extensive and lacked focus on important issues.

Service providers: Role of home visitor - Initially the home visitor was to be a teacher, a volunteer, and an older woman. The relationship between home visitor and client, however, evolved into friendship where provision of emotional and social support became much more important. It became necessary to hire younger women for this role and to make them part-time employees of WAHS. Training - Preservice training became more activity-oriented and provided opportunities to practice. Training also changed to emphasize information gathering, presentation techniques, and rapport building.

Program participants: The program started by focusing on first-time mothers. However, with a decrease in teen pregnancy in the area,

first-time pregnancies also decreased. It was also realized that first-time mothers often lived with their mothers and were possibly in less need than mothers having a second or third child and out on their own. Therefore, multiparous women began to be enrolled.

Process of program implementation: The need for closer supervision of home visitors became apparent. It also became important to make sure that clinic personel understood the role of home visitors. WAHS decided to administratively place home visitors under special services rather than nursing or social services.

WAHS is committed to the concept of the lay community worker as a home visitor. The agency is finding ways to continue funding of this type of service. The home visiting role maintains a maternity/child health focus, but is expanding to include activities in areas of chronic illness such as hypertension and diabetes.

Table 1 - Home Visit Schedule

Period	Frequency	Number
Prenatal	biweekly	10
Birth	once	1
0 - 6 months	biweekly	12
7 - 12 months	monthly	6
13 - 24 months	every 6 weeks	9
		38

Table 2 - Demographics

81% single - 68% living with parent/grandparent
19% head of own household

37% teenage, 35% 20-24 (mean = 22.6)

61% primiparous

77% high school graduate (mean = 11.8)

18% employed

55% began prenatal care in first trimester (mean = 3.1 months)

47% no telephone

50% no family car

65% no central heating

72% no air conditioning

83% unplanned pregnancy

Table 3 - Home Visits

Period	N	Mean Number of Visits	
		Expected	Received
prenatal	73	7.3 (1 - 15)	5.3 (2 - 13)
12 month postnatal	65	16.1 (3 - 20)	11.0 (2 - 20)

Table 4 - Utilization of Prenatal Care
(Number of Prenatal Visits)

	WAHS Home Visited	WAHS Control	Non-WAHS Control	p
N	68	55	76	
mean	8.8	7.7	6.7	.003
% <9	48.5	56.4	73.7	.007

Table 5 - Birth Outcomes

	WAHS Home Visited	WAHS Control	Non-WAHS Control	p
birthweight (oz.)				
N	69	56	77	
mean	113.7	116.9	112.0	.36
% LBW	11.6	1.8	14.3	.05
APGAR (1 min.)				
N	65	54	73	
% <8	27.7	25.9	30.1	.87
APGAR (5 min.)				
N	65	54	73	
% <8	4.6	5.6	8.2	.66
ICU (%)	6.1	7.5	14.5	.20
Breastfed (%)	9.0	14.3	11.7	.65

Table 6 - Utilization of Pediatric Care

(weeks)	WAHS Home Visited	WAHS Control	Non-WAHS Control	p
age at first visit				
median	2.4	2.4	6.2	.0001
N	62	35	66	
% >3	33.9	42.9	80.3	.0001
age at 1st DPT				
median	9.9	9.0	10.7	.002
N	62	35	65	
% >10	46.8	37.1	61.5	.05
age at 2nd DPT				
median	19.4	19.6	22.6	.004
N	59	34	64	
% >20	42.4	47.1	67.2	.02
age at 3rd DPT				
median	29.1	28.0	32.4	.03
N	57	28	58	
% >30	45.6	35.7	60.3	.07
# of 1st yr. visits				
median	6.0	5.0	5.0	.80
N	65	21	68	
% <4	3.1	4.8	17.6	.01

Table 7 - Caldwell HOME Scale Scores at 12 Months

Scale	WAHS Home Visited	WAHS Control	Non-WAHS Control	p
Responsivity (11)	8.1	8.3	7.9	.69
Restriction (8)	4.5	4.2	4.8	.14
Organization (6)	4.5	3.9	4.0	.04
Play Materials (9)	4.3	4.1	4.0	.80
Involvement (6)	2.9	2.9	2.5	.30
Variety (5)	2.4	2.4	2.3	.97
Total (45)	26.6	25.7	25.5	.55
N	54	19	56	